

LOW NO_x RADIANT WALL BURNER

ABSTRACT OF THE DISCLOSURE

A low NO_x burner nozzle assembly for a radiant wall burner includes an elongated hollow burner tube and a discharge nozzle. The burner tube defines a conduit for supplying a mixture of fuel and air to a radiant combustion area of a combustion zone that surrounds the nozzle assembly. The discharge nozzle is mounted on the tube at the downstream end of the conduit adjacent the radiant combustion area and the same is adapted for directing the mixture of fuel and air into the radiant combustion area in an essentially radial direction. The discharge nozzle includes a plurality of flow directing members arranged in an array which extends circumferentially around the discharge nozzle, and the same are arranged to define therebetween a plurality of passageways which extend in a generally radial direction. The passageways are arranged so as to have different respective flow areas. The discharge nozzle also has an end cap to prevent axial flow of the primary air/fuel mixture. The end cap has an axially extending hole therein, and the nozzle assembly includes a staged fuel burner nozzle arranged so as to protrude axially through such hole and deliver staged fuel to the combustion zone in spaced relationship to the radiant combustion area.